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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,079	07/19/2002	Jitao Zou	3015-9999US	2764

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TRASK BRITT  
P.O. BOX 2550  
SALT LAKE CITY, UT 84110

EXAMINER

MCELWAIN, ELIZABETH F

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/088,079	ZOU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Elizabeth F. McElwain	1638	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 October 2005 and 14 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 7-11, 16-20, 25-30, 35-38 and 40-43 is/are rejected.
- 7) ☒ Claim(s) 4-6, 13-15, 22-24 and 32-34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/088,079</u>  | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

The amendment filed October 17, 2005 and the response filed November 14, 2005 have been entered.

Claims 1, 2, 4-11, 13-20, 22-30, 32-38, 40 and 41 are currently amended.

Claims 3, 12, 21 and 31 have been cancelled.

Claims 42 and 43 are newly submitted.

Claim 39 is withdrawn as drawn to a non-elected invention.

Claims 1, 2, 4-11, 13-20, 22-30, 32-38 and 40-43 are examined on the merits.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Election/Restrictions***

This application contains claim 39 drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

#### ***Drawings***

The drawings filed November 14, 2005 are accepted.

#### ***Claim Rejections - 35 USC § 112***

1. Claims 1-2, 7-11, 16-20, 25-30, 35-38, 40 and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 1, 10, 19 and 29, and claims 2, 7-9, 11, 16-18, 20, 25-28, 30, 35-38, 40 and 41 dependent thereon, are indefinite in the recitation of “a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase of the plant”, given that it is unclear what would constitute the wild type enzyme from the plant, so therefore it is unclear what a glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition would be.

2. Applicants' arguments filed October 17, 2005 have been fully considered but they are not persuasive. Applicants argue that one of skill in the art would know that “wild-type” refers to the native plant enzyme of the plant. The Examiner maintains that it is unclear what the particular sequence encoding a glycerol-3-phosphate in any given plant would be, therefore, it is further unclear how one skilled in the art would identify that the sequence was altered and that the enzyme is less sensitive to feedback inhibition. The metes and bounds of the claims are not clearly set forth.

Claims 42 and 43 are indefinite in the recitation of “an amino acid sequence of SEQ ID NO: 2”, since this can be interpreted as any portion of SEQ ID NO: 2. Amendment of the claim to read “the amino acid sequence of SEQ ID NO: 2” would overcome the claim.

The rejection of claims 3, 12, 21 and 31 as indefinite in the recitation of “gpsA2<sup>FR</sup>”, is withdrawn in view of the cancellation of the claims.

The rejection of claims 7, 16, 25 and 35 as indefinite in the recitation of “oilseed bearing plant” is withdrawn in view of the cancellation of the amendment of the claims.

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3. Claims 1-2, 7-11, 16-20, 25-30, 35-38, 40 and 41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, as stated in the last office action.

4. Applicants' arguments filed October 17, 2005 have been fully considered but they are not persuasive. Applicants assert that they have disclosed one example of a GPDH that would be less sensitive to feedback inhibition than the wild-type, and do not need to disclose every possible sequence. Applicants argue that possession of the invention may be shown by describing its elements, asserting that the specification describes the physical, structural and functional characteristics of GPDH, and that the specification discloses an E. coli GPDH sequence of SEQ ID NO: 1 and the transformation of Arabidopsis. Applicants state that the disclosure of this one E. coli sequence provides a "universal plant model system" that one skilled in the art would recognize as possession of the claimed invention.

The Examiner maintains that the one example of an E. coli GPDH is not sufficient to describe the claimed genus. Applicant has not disclosed the structural feature of a GPDH that results in the functional characteristic of being less sensitive to feedback inhibition than wild-type, and while a transformed Arabidopsis plant is disclosed, clearly no universal plant model has been described for a GPDH that results in the functional characteristic of being less sensitive to feedback inhibition than wild-type.

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5. Claims 1-2, 7-11, 16-20, 25-30, 35-38, 40 and 41 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of using DNA encoding SEQ ID NO: 2 to transform a plant, does not reasonably provide enablement for a method of expressing in a plant any glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than wild type glycerol-3-phosphate dehydrogenase and plants transformed by that method, or to use of a DNA sequence encoding said enzyme that has a single amino acid substitution that renders it feedback defective, while not significantly altering its catalytic ability. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims, as stated in the last office action.

6. Applicants' arguments filed October 17, 2005 have been fully considered but they are not persuasive. Applicants assert that they have disclosed one example, and have disclosed methods for preparing others. In addition, applicants assert that a considerable amount of experimentation is permissible if there is a reasonable amount of guidance, and the disclosed sequence could be used as a probe for other heterologous GDPH encoding genes. The Examiner maintains that it is highly unpredictable for one skilled in the art to identify other heterologous GDPH encoding genes that are less sensitive to feedback inhibition than a wild type GDPH, and applicants have not provided any guidance with regard to how to choose from the multitude of possible sequences that could encode GDPH to identify those that would be less sensitive to feedback inhibition. Therefore, as stated above and for all of the reasons set forth in the last office action, it would require undue experimentation to make and/or use the invention as broadly claimed.

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Claims 4-6, 13-15, 22-24 and 32-34 are objected to for depending on a rejected base claim, but would be allowable if written in independent form.

### *Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth F. McElwain whose telephone number is (571) 272-0802. The examiner can normally be reached on increased flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elizabeth F. McElwain, Ph.D.

Primary Examiner

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EFM